



Spring 2019

# Synopsys Championship

Celebrating 60 Years of Student Science





## Intel International Science and Engineering Fair (Intel *ISEF*) 2018:

By Heidi Black

Pittsburgh, The Steel City, played host to this year's Intel ISEF event. After a long flight into the beautiful city, it was hard to get to the David L. Lawrence Convention Center by 7 PM for the ever popular pin trading, but we made it! Fourteen students from Santa Clara County traveled with us, and we were joined by Cathy Messenger, the research class teacher from Los Gatos HS. She was a HUGE help.

On Monday we began the process of setting up the projects. During the check-in inspection, we discovered that at least two boards had items that had to be covered. Fair rules state that no logos or trademarks be visible, but there they were -- several logos and the pink breast cancer awareness ribbon. If you think our fair is tough, try dealing with the ISEF SRC! This year we switched from foam core boards to a roll up stand that is allowed on the planes. Setting up with these new systems took well past noon, then it was time for lunch. After returning we had each group practice their talk. Intel ISEF sponsors dinner and an opening ceremony, which includes a welcome to all the participants from other countries.

Tuesday morning we try to recoup some of our lost sleep, meet for the Innovators and Entrepreneurs talk, and attend the Nobel question session. We attended the dance and dinner, giving us a chance to ride the subway.

Wednesday is judging day. With all 1700 finalists and nearly as many judges entering the hall together, you could feel the excitement. We bring lunch to the students, and get to check in on how they are doing before they return for another couple hours of judging. We also were able to take a group shot with the famous bridges in the background. After judging we headed to the celebration and dinner at Heinz Field and the Science Center, and walked through some pretty significant thundershowers. Thursday morning is public viewing. For dinner we went up the Duquesne Lift and had a dinner with a spectacular view of the city. We managed to make it in time for our special award winners to be recognized on stage. Friday is the Grand Award Ceremony, and we happily collected several more awards. Then, it's time to change, pack up the projects, grab lunch, and head back home-just in time for finals!



(not in order) Jasmine Ngo, Anika Cheerla, Alice Martynova, Ruhi Sayana, Cameron Jones, Bryan Chiang, Utkarsh Tandon, Suhas Prasad, Raj Palleti, Dhanvee Ivaturi, Philip Kabranov, Anjay Saklecha, Krish Kapadia, Prachi Bhagavatha



When asked if he wanted to be a scientist when he grew up, my young son responded, "No, I want to be a scientist when I am a kid!"  
I feel like a kid every day!

Dr. Frances Arnold, Nobel Laureate  
2018 Nobel Prize in Chemistry  
Innovation by Evolution: Bringing New Chemistry to Life



## Welcome from Katherine Naszradi

President, Synopsys Outreach Foundation

### Welcome to the 2019 Synopsys Championship – you made it!

Today you are among the brightest young minds of Silicon Valley - the future scientists, inventors, humanitarians, engineers, and CEOs. While some will advance to the state and international competitions, every one of you, through your months of hard work and research, have achieved something incredible by just making it to this point.

This will be an experience you'll soon not forget, and I'd like to congratulate everyone on all their hard work and perseverance. Last but not least, we are extremely grateful for everyone who works tirelessly to make today a success. From the organizers, the judges, the parents, the volunteers and mostly the teachers -- all these incredible people come together every year to make this event happen and we are thankful for their herculean efforts.

We would also like to thank the Santa Clara Valley Science & Engineering Fair members -- for all their years of hard work and dedication to the students of Santa Clara Valley. **Congratulations on your 60th Year Anniversary!** The **Synopsys Outreach Foundation** considers it a great honor to have served as the major sponsor of The Synopsys Championships since 2000 and we hope you have a fantastic experience at the fair.

## Welcome from Karen Gundy-Burlet

2018-2019 President, Santa Clara Valley Science & Engineering Fair Assn.

On behalf of the Board of Directors of Santa Clara Valley Science and Engineering Fair Association (SCVSEFA), I would like to welcome you to the 2019 Synopsys Championship! This is the 60<sup>th</sup> anniversary of the science fair and a special year for me as it marks the 40<sup>th</sup> anniversary of my association with the fair. Lynn Shannon (another longtime Board Member) and I were the winners of the 1979 fair and were sponsored at the International Science and Engineering Fair in San Antonio, Texas. That amazing experience set me on a career path at NASA that I had never imagined as the daughter of a gas station owner! It is exciting to see our students develop their own passion and skills as they move forward into careers informed by their own science fair experience.

Then and now, I would like to thank all of the dedicated board members, staff and volunteers who put on the fair. It is a full year-effort to organize the fair for the roughly thousand students that participate in the fair. Tasks span the gamut from securing the venues, organizing the judging volunteers and awards, scientific review, financial management, fundraising, website development and the setup and running of the fair itself. The teachers do a fantastic job of mentoring their students and guiding them through the process and we thank our judges for their insightful evaluation of the student projects. We thank our many generous individual, corporate and special awards sponsors.

And finally, I would like to thank the Synopsys Outreach Foundation for their gracious and generous support of the Championship over the years.

I hope that you all will approach your lives with the same sense of curiosity and wonder that you have shown by investigating your topics. This combined with skill and determination will enable you to make our world a better place. I look forward to your ensuing efforts!

**Our mission is to awaken more students to the wonder and power of science, technology, engineering and mathematics (STEM).**



Karen Gundy-Burlet, 1979, future NASA Engineer

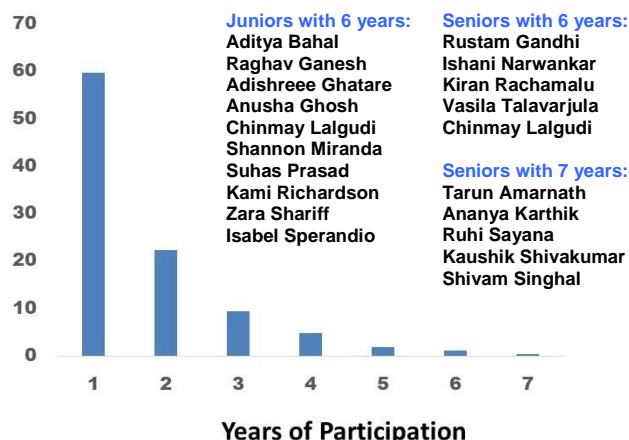


# Students Shine at the California State Science Fair



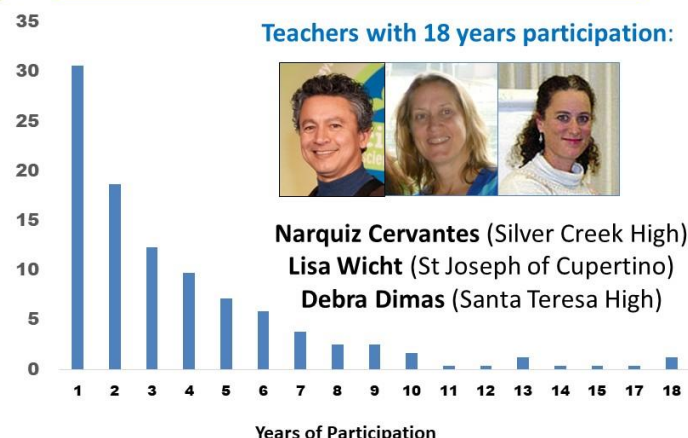
## Years of STUDENT Participation In the Synopsys Championship

% 2019 Fair Applicants (n=1137)



## Years of TEACHER Participation In the Synopsys Championship

% 2019 Fair Teachers (n=236)



## What's Next ?

If your project was judged as a First, Second, Honorable Mention or a Special Award winner, you will be invited to attend the **Awards Ceremony on Sunday, April 7th, 2019**. Check out [www.science-fair.org](http://www.science-fair.org) after March 31st to see if you are a winner and to find details for the event. There will be two ceremonies; one for the middle school winners and one for high school winners. You'll receive your ribbon or medal and you may also get a Special Award -- or more than one! Or ... a spot at the California State Science Fair! Or ... an all-expense-paid trip to the Intel International Science and Engineering Fair - the Grand Prize!

Volunteers make it happen for our students. You can join our wonderful team of volunteers. Sign up at [www.science-fair.org](http://www.science-fair.org) and click on VOLUNTEERS. Volunteers make it possible for students' dreams to come true.

**THANK YOU !**

Non-affiliated 2018 Volunteers returning for 2019	22
Scientific Review Committee Volunteers	15
SCVSEFA Staff and Board Members at the Championship	28

[www.science-fair.org](http://www.science-fair.org)

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CONGRATULATIONS 2019



# Special Awards and Sponsors of Special Awards

AI Foster Award	Hegland Award	Santa Clara Valley Science & Engineering Fair Association
American Association for Laboratory Animal Science, Northern California Branch	IBM Award	Board of Directors Awards - Middle School
American Chemical Society, Santa Clara Valley Local Section	I-SWEEEP	Schonert Award
American Institute of Aeronautics and Astronautics (AIAA) Intelligent Systems Award	Inez M. Lechner Award	Society for In Vitro Biology
American Meteorological Society	Institute of Electrical and Electronics Engineers (IEEE)	Society of Vacuum Coaters (SVC)
American Psychological Association	Intel Excellence in Computer Science Award	Society of Women Engineers
American Society of Civil Engineers	Morgan Lewis	Stanford University Chemistry Dept. *
Arizona State University Walton Sustainability Solutions Initiative	Mu Alpha Theta	Stockholm Junior Water Prize
ASEI American Society of Engineers of Indian Origin	Muddu Family Entrepreneurial and Startup Award	System Safety Society
ASM International, A Society for Materials, Santa Clara Valley	NASA Earth Systems Science Award	Synopsys - Society of Women Engineers
ACM San Francisco Bay Area Professional Chapter	National Oceanic and Atmospheric Administration (NOAA)	TechLab Education
Association of Women Geoscientists, SF Bay Area Chapter	Northern California Institute of Food Technologists (NCIFT)	The Ann Burrell Award
Association for Women in Science, Palo Alto Chapter	Resource Area for Teaching (RAFT) Teacher Award	The Bruce Kawanami Engineering Award
Broadcom MASTERS	Ricoh Corporation	The Kerry Veenstra Award
California Association of Professional Scientists	SAMPE- Society for the Advancement of Material and Process Engineering	The Synopsys Outreach Foundation n+1 Prize
California Botanical Society	San Jose State University College of Engineering	Trimble Navigation Awards
California Society for Biomedical Research - Ron Orta	Santa Clara County Biotechnology Education Partnership	United States Air Force
Excellence in Biomedical Research	Santa Clara Valley Science & Engineering Fair Association - Board of Directors Awards - High School	United States Coast Guard Auxiliary
Green Ninja		United States Metric Association
		United States Navy and Marine Corps
		U.S. Public Health Services Award
		University of Toronto Award
		Varian Medical Systems
		Wireless Communications Alliance
		Yale Science and Engineering Association Award
		Zeidman Award
		* New Award



The annual Synopsys Championship showcases students in the Santa Clara County of California who will become our future scientists, technology experts, engineers, and mathematicians. This regional competition celebrates achievement by middle and high school students supported by their parents, teachers, and schools.

In the early days, the Fair was held at the County Fairgrounds, there were days for school field trips to see the projects, and public viewing. At one time students in grades 1-5 could enter, but since the late 1990's, it's been limited to any Santa Clara County student in grades 6 to 12 in public, private, parochial, or home schools. The Fair moved to Parkside Hall in the 1990's, then to the Convention Center in 2000, with major funding from the Synopsys Outreach Foundation. The first computer database for the fair was created by Peter Castro in 1980, while he was still a high-school student. Since 1977, our Grand Prize winners go on to ISEF. We have also sent students to the CSEF (California Science & Engineering Fair, formerly CSSF) since 1974. Sponsored students are the Grand Prize Alternates, and the Isabelle Stone Award winners (best 6th, 7th, and 8th grade projects in the Biological Sciences) and the Castro Family Award winners (Physical Sciences.)

Why do we keep doing this? As long-term member Dick Schonert once said: "I am a science educator, I love kids, and the board members are one of the nicest groups of people I've ever worked with." We continue to support science education and provide the venue for science students to shine.

**Transitions...** The last couple of years have seen some transitions from the familiar, dedicated group of major supporters and fair administrators to a new set of supporters. **Gary Robinson**, President of the Synopsys Outreach Foundation (SOF) and unfailing supporter of the Synopsys Championship since 2000, retired in December 2018 and will be sorely missed. Gary's occasional suggestions for style improvements and the long-term financial commitment from the SOF allowed SCVSEFA to hire an administrator and increase the visibility, size and quality of the Synopsys Championship. **Thank you Gary!!**

We look forward to working with his replacement, **Kate Naszradi**.

In 2005 we hired a "two for one" deal. **Ruthie Waters**, who retired in 2017, and **Craig Laughton**, who retired in 2019, Ruthie & Craig worked tirelessly to support the Synopsys Championship, the students and their parents. Together they enabled SCVSEFA to become a finely tuned machine. Craig was the guy who made sure you received credit for your application payment, helped process those thousands of applications, hauled and set up signs for all our events, and made sure we all had a flight, bus, and hotel room at CSEF and ISEF. We extend our heartfelt thanks for their many years of exceptional and dedicated service.

In 2018 we welcomed **Katherine Jarvis** as a part time administrator whose attention to detail has kept us on the straight and narrow. She also stepped up when Craig retired and held things together until Craig's replacement, **Nina Wong-Dobkin** came on board very recently. Welcome Katherine & Nina!



Every year the Synopsys Outreach Foundation sponsors **sciencepalooza!** to ignite a passion of science and engineering in students of East Side Union HSD. The 20th annual sciencepalooza! hosted almost 800 competitors, some 140 of which will also be competing at the Championship. In this time, three Eastside students have won First Place at ISEF, two have won scholarships, and one presented at a Nobel Prize Ceremony in Stockholm, Sweden!

(right) Jyoti Rani and classmates, from Oak Grove's Ms. Claudio class won their categories and will be competing at the Synopsys Championship.



## Santa Clara Valley Science & Engineering Fair Association

### Officers

President: Karen Gundy-Burlet, Ph.D.  
President-Elect: Heidi Strahm Black  
Treasurer: Katy Korsmeyer, Ph.D.  
Secretary: Sandra Meditch

thank you

### Board Members

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**Staff:** Katherine Jarvis, Nina Wong-Dobkin

**Frank Crosby** was born on February 16, 1930 in Texas, and his heart grew to the size of his home state. Frank pulled himself up by the bootstraps-serving in our country's military, attending junior college and putting himself through college. He earned a degree in zoology from UC Berkeley and a Masters in endocrinology, then moved to Morgan Hill to teach chemistry, advanced algebra, trigonometry, and physics at Live Oak HS. He and his wife, Ruth, raised 4 children.

Frank was one of the founding members of the SCVSEFA in 1960, and served in many roles, including president, for five decades. Many of the current board members were recruited by this irresistible soul. Hundreds of our alumni had the privilege of traveling as part of the **"Wild Bunch"** with Frank to the State and International science fairs over a 10-year period after he retired from teaching.

Frank Crosby was a person who left the world more educated and better off through his work couched in respect for the planet and its inhabitants. We are grateful he gave so much to the Santa Clara Valley Science and Engineering Fair Association and students. He is greatly missed.

**We gratefully acknowledge those who support the Synopsys Championship** and thank those who support STEM education by allowing their employees time to volunteer at the event. Thanks to the students, parents, teachers, mentors, schools and major sponsor, **The Synopsys Outreach Foundation**, for making the Synopsys Silicon Valley Science & Technology Championship a premier event.

### Major Sponsors (\$75,000 or more annually)



### Benefactors (\$10,000 or more annually)

Pat Castro -

In memory of Peter S. Castro

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Iterra Systems

Morgan Lewis, Counselors At Law



### Sponsors (\$1,000-\$2,499 annually)

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Peter and Carrie Castro

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Silicon Valley Community Foundation

Trimble Navigation

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